DOMINION OF CANADA

NUMBER 415265

To all to whom these presents shall come

Whereas Peter N. Ottersland,

of Watertown, New York, U.S.A.,

has petitioned the Commissioner of Patents, praying for the grant of a Patent for an alleged new and useful improvement in Log Chippers,

a description of which invention is contained in the specification, of which a duplicate is hereunto attached, and made an essential part hereof, and has complied with the requirements of The Patent Act,

Now Therefore the present Patent grants to the said

Peter N. Ottersland,

his executors, administrators, legal representatives and assigns, for the period of Seventeen Years from the date of these presents, the exclusive right, privilege and liberty of making, constructing and using, and vending to others to be used, in the Dominion of Canada, the said invention, subject nevertheless to adjudication before any Court of competent jurisdiction.

Provided that the grant hereby made is subject to the conditions contained in the Act aforesaid.

In Testimony Whereof, I have hereunto set my hand, and caused the Seal of the Patent Office to be hereunto affixed, at the City of Ottawa, in the Dominion of Canada, this Twenty-first day of September in the year of Our Lord, one thousand nine hundred and forty-three.

J. T. Mitchell
Commissioner of Patents.

REPRESENTATIVE IN CANADA.

Entered under Section 30, of the Patent Act 1935.

Name..... Charles H. Riches & Sons,

Address..... 45 Richmond St. W.,

..... Toronto, Ontario.

496,079

-SPECIFICATION-

TO ALL WHOM IT MAY CONCERN:-

Be it known that I, PETER N. OTTERSLAND, a citizen of the United States, residing at Watertown, in the County of Jefferson and State of New York, United States of America, have made new and useful improvements in

"LOG CHIPPERS"

and I hereby declare the following to be a full, true and exact description of the same.

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This invention relates to LOG CHIPPERS.

Chippers usually consist of a rotary disk having a series of knives or blades, the log to be chipped being fed to the rotary cutter in an inclined feed spout or chute. As the knives are carried by the disk into engagement with the end of the log, the chips are cut therefrom.

In the chippers now in common use, the knives are so spaced around the disk that only one knife or blade is performing its cutting or chipping function at any one time. Thus, there is a considerable space on the disk between the successive knives or blades.

As the knives engage and cut chips from the end of the log they tend to draw the log downwardly in the chute and while the knife cuts the log and before the next knife comes into action there is a considerable pressure exerted between the end of the log and the surface of the disk. This causes the disk to wear, forming concaved or grooved portions between the knives. When the end of the log engages or moves into and leaves these grooved or concaved surfaces, it is kicked back and thus is not properly positioned for engagement by the knives. Furthermore, there is nothing in the chipper as now manufactured to engage and steady the log between successive cuts. As the knives engage the log the log tends to pivot about its lower edge

since it usually does not entirely fill the feed spout and therefore "jumps around", thus preventing effective action of the knives.

This invention has for its salient object to provide a chipper so constructed and arranged that the chipping of the log will be expedited and rendered more efficient.

Another object of the invention is to provide a chipper so constructed and arranged that the log will be held steady in the chute at all times during the chipping operation and the chipper will therefore produce chips of more uniform length than are produced in machines of the conventional type.

Another object of the invention is to provide a spout so constructed and arranged that a log therein will take a position as near as possible to the axis of the chipper disk.

Another object of the invention is to provide a chute and chipper disk or cutter so correlated that the setting of the knives on the disk and the cross section of the chute will cooperate in moving the log being cut to a position in the chute nearest the axis of the disk, thereby insuring the simultaneous operation of a plurality of knives on the log.

Another object of the invention is to provide a knife for a chipper so constructed and arranged that chips of uniform width will be cut.

Another object of the invention is to provide a construction of knife and chute so constructed and arranged that a plurality of knives will operate simultaneously on small logs as well as on large logs.

Further objects of the invention will appear from the following specification taken in connection with the drawings which form a part of this application, and in which

Fig. 1 is an elevational view partly in section of a chipper disk and chute constructed in accordance with the invention, this view being taken substantially on line 1-1 of Fig. 2;

Fig. 2 is a vertical sectional elevation through the discharge end of the chute;

Fig. 3 is a plan view of a modified form of knife which may be used on the chipper illustrated in Figs. 1 and 2;

Fig. 4 is an end elevation of the knife shown in Fig. 3; and

Fig. 5 is an edge view of the knife shown in Fig. 3.

The invention briefly described comprises a chipper disk having a plurality of knives arranged symmetrically on the disk and extending therethrough, the knives being mounted tangentially to a circle having the disk axis as its center. The chipper disk is used in conjunction with a chute in which the cross section is so designed that the logs will tend to move toward the lower inner portion of the disk and the tangential arrangement of the knives operating in conjunction with the shape of the chute tends to force

the logs in the chute to a position as near as possible to the axis of the disk. This will insure the simultaneous operation of a plurality of knives on the log since the portions of the knives nearer the disk axis are closer together than the outer portions thereof. In other words, the knives as mounted diverge toward the periphery of the disk. The invention also includes a stepped construction of knife which operates to cut chips of uniform width from the log.

Further details of the invention will appear from the following description.

In the particular embodiment of the invention illustrated in the drawings, the chipper comprises a frame 10 mounted on a base 11 and provided with suitable bearings for supporting a shaft 12 on which is mounted the chipper disk 13. The disk 13 has formed therein a plurality of slots 14 and in each slot there is mounted a knife 15. Each knife is adjustable by means of a screw 16 and is locked in adjusted position by a bolt 17.

As shown particularly in Fig. 1, the knives are arranged and the slots are so formed that the cutting edges of the knives are disposed tangentially to a circle C having the axis X of the shaft 12 as its center.

By means of the tangential arrangement of the knives the engagement of a knife with a log in the chute tends to draw the log toward the axis X of the shaft 12. From the showing in Fig. 1 it will be noted that the knives diverge toward the periphery of the disk and therefore the

portions of the knives nearer the axis are closer together than the outer portions thereof. Because of this condition it is desirable to have the knives engage the log as close as possible to the axis X, thereby insuring the simultaneous engagement of a plurality of knives with the log.

In order to further promote the condition described in the preceding paragraph, the chute 20 which has its longitudinal axis and discharge end offset from the axis X of the cutter, is so designed that the bottom 21 slopes downwardly and provides a pocket 22 for receiving the logs which are moved toward or into the pocket 22 by the action of the knives thereon. The downward sloping bottom and pocket at the discharge end of the chute are formed by the bed knife 25.

Figs. 3, 4 and 5 show a modified form of knife which may be used to advantage with the chipper illustrated in Figs. 1 and 2. This knife has a serrated cutting edge 26 formed by a plurality of ledges 27. These ledges form in effect a plurality of independent cutting knives, each of which cuts a uniform width of chip and the use of this knife insures uniform chips. From the illustration in Fig. 5 it will be noted that each ledge 27 has its outer or cutting edge disposed in a different plane from the plane of the other edge and one end of each step or ledge is disposed in a different plane from the other end.

Since the chipper illustrated in Figs. 1 and 2 has the knives so spaced that a plurality of knives will simultaneously engage and cut a log disposed in the chute, a log will be at all times held by the knives, these being prevented from bouncing around in the chute. Because of

this firm holding of the log in the chute the divided edges of successive knives will enter the log and will follow identical paths therethrough, thus producing uniform chips. Such a cutting action cannot be obtained in the ordinary chipper where only one knife engages the log at any one time and the log "jumps" between the engagement of successive knives.

Fig. 1 illustrates in dotted lines various sizes of logs in the chute 20 and it will be obvious from the foregoing description and from the illustration in the drawings that the chipper construction described insures the simultaneous engagement of a plurality of knives in the cutting operation on the logs regardless of the size of the log. As above stated, this is due to the fact that the log being cut is moved as near as possible to the axis of the disk. Furthermore, by the use of the knife shown in Figs. 3, 4 and 5 a uniform width of cut or chip will be insured.

Although certain specific embodiments of the invention have been particularly shown and described, it will be understood that the invention is capable of modification and that changes in the construction and in the arrangement of the various cooperating parts may be made without departing from the spirit or scope of the invention, as expressed in the following claims:

WHAT I CLAIM IS:

1. A log chipper of the type consisting of a disk having a plurality of openings therethrough, a cutting knife adjacent each opening having its cutting edge disposed in a plane offset from the disk axis and a downwardly inclined chute for feeding logs to the knives, in which the lower surface of the chute is inclined downwardly transversely toward the disk axis, the lowest point in said lower surface being disposed at the side of the chute nearest the disk axis whereby the logs in the chute will be moved by gravity and by the action of the disk knives toward the disk axis.

2. A log chipper as set forth in Claim 1 in which the lower end of the lower surface of the chute is formed by a stationary knife which conforms in shape to the lower surface of the chute and forms a continuation thereof.

3. A log chipper as defined in claim 1 in which the knives are spaced on the disk a distance less than the distance between the top and bottom surfaces of the chute so that a plurality of knives will be simultaneously disposed opposite and will overlap the discharge end of the chute.

4. A log chipper of the type consisting of a disk having a plurality of openings therethrough, a cutting knife adjacent each opening and a downwardly inclined chute for feeding logs to the knives, in which the lower surface of the chute is inclined downwardly transversely toward the disk axis, the lowest point in said lower surface being disposed at the side of the chute nearest the disk axis whereby the logs in the chute will be moved by gravity and by the action of the disk knives toward the disk axis.

5. A log chipper of the type consisting of a disk having a plurality of openings therethrough, a cutting knife adjacent each opening, and a downwardly inclined chute for feeding logs to the knives, in which the knives are spaced apart on the disk a distance less than the distance between the top and bottom surfaces of the chute outlet end so that a plurality of knives will be simultaneously disposed opposite to and will overlap the discharge end of the chute and in which the disk knives are divided into a plurality of elongated, substantially flat cutting ledges.

6. A log chipper of the type consisting of a disk having a plurality of openings therethrough, a cutting knife adjacent each opening, and a downwardly inclined chute for feeding logs to the knives, in which the knives are spaced apart on the disk a distance less than the distance between the top and bottom surfaces of the chute outlet end so that a plurality of knives will be simultaneously disposed opposite to and will overlap the discharge end of the chute and in which the disk knives are divided into a plurality of cutting surfaces.

7. A log chipper of the type consisting of a disk having a plurality of openings therethrough, a cutting knife adjacent each opening, and a downwardly inclined chute for feeding logs to the knives, in which the knives are spaced apart on the disk a distance less than the distance between the top and bottom surfaces of the chute outlet end so that a plurality of knives will be simultaneously disposed opposite to and will overlap the discharge end of the chute and will simultaneously cut a log disposed therein thereby holding the log steady at all times, and in which each of the disk knives is provided with a serrated cutting edge.

Signed at Carthage, New York

this 21st day of August 1942.

Peter N. Ottenland X

In the presence of:

H. Avery Jenkins

Esther B. Clark

Fig. 1,

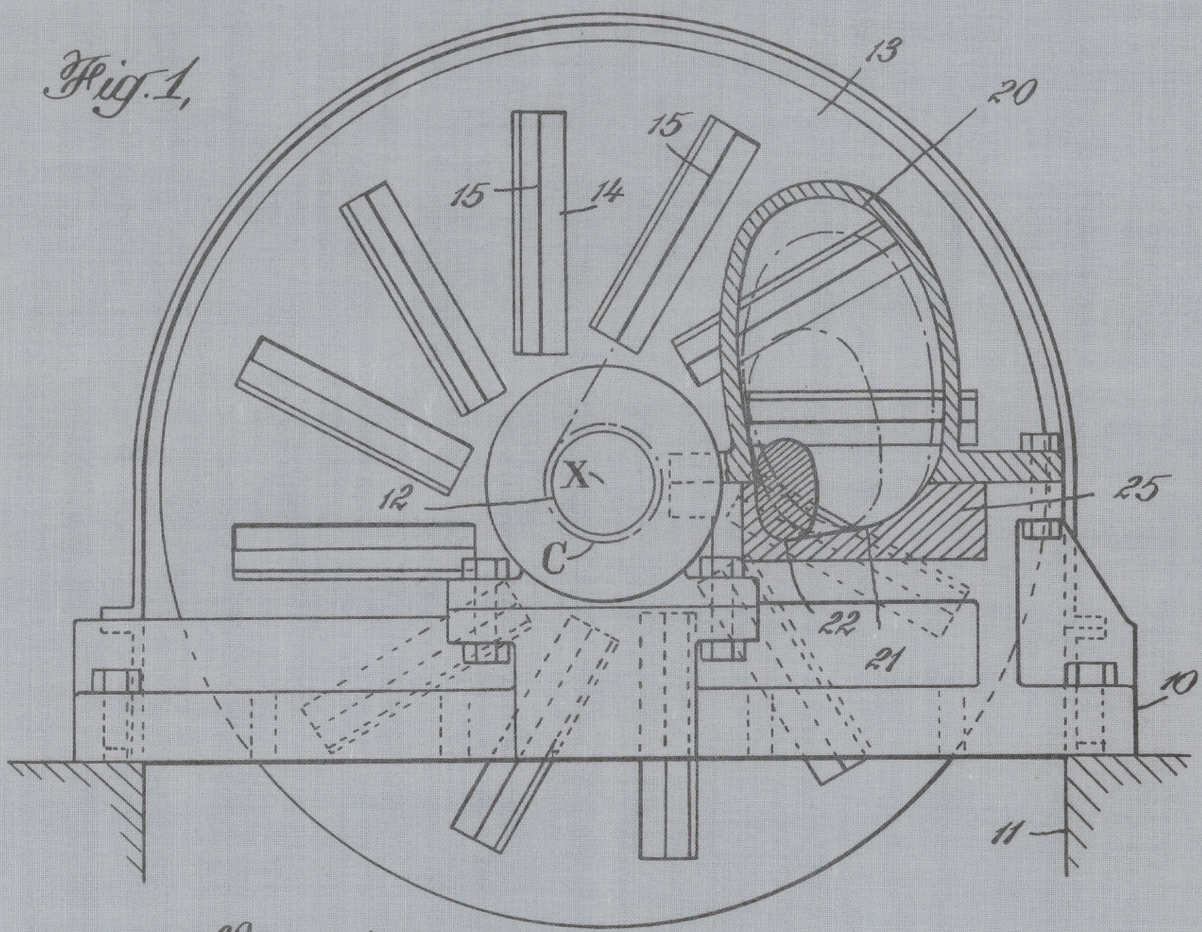


Fig. 2,

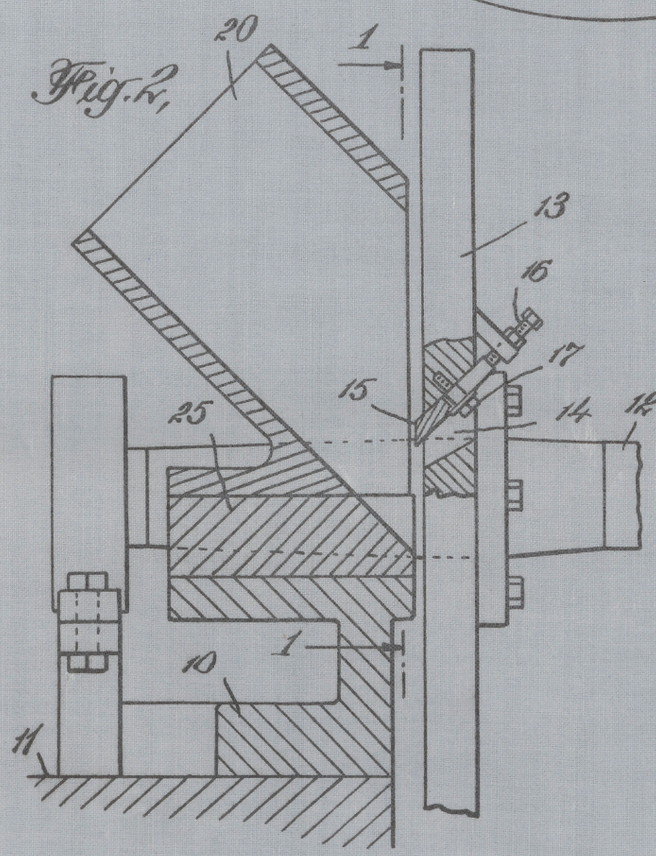


Fig. 3,

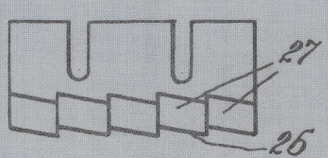


Fig. 4,

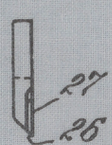
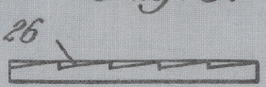


Fig. 5.



PETER N. OTTERSLAND

INVENTOR

Certified to be the drawings referred to in the specification hereunto annexed.

TORONTO, September 19th, 1942. 19

Marks, Richter & Lowe

ATTORNEY

The attention of Patentees is called to the following section of The Patent Act, 1935.

Abuse of rights under patents.

"**65.** (1) The Attorney General of Canada or any person interested may at any time after the expiration of three years from the date of the grant of a patent apply to the Commissioner alleging in the case of that patent that there has been an abuse of the exclusive rights thereunder and asking for relief under this Act.

What amounts to such abuse.

(2) The exclusive rights under a patent shall be deemed to have been abused in any of the following circumstances:—

Not working, patented invention.

(*a*) If the patented invention (being one capable of being worked within Canada) is not being worked within Canada on a commercial scale, and no satisfactory reason can be given for such non-working:

Proviso.

Provided that, if an application is presented to the Commissioner on this ground, and the Commissioner is of opinion that the time which has elapsed since the grant of the patent has by reason of the nature of the invention or for any other cause been insufficient to enable the invention to be worked within Canada on a commercial scale, the Commissioner may make an order adjourning the application for such period as will in his opinion be sufficient for that purpose;

Prevention of working by importation.

(*b*) If the working of the invention within Canada on a commercial scale is being prevented or hindered by the importation from abroad of the patented article by the patentee or persons claiming under him, or by persons directly or indirectly purchasing from him, or by other persons against whom the patentee is not taking or has not taken any proceedings for infringement;

Not meeting demand.

(*c*) If the demand for the patented article in Canada is not being met to an adequate extent and on reasonable terms;

Prejudice to trade by refusal to licence.

(*d*) If, by reason of the refusal of the patentee to grant a licence or licences upon reasonable terms, the trade or industry of Canada or the trade of any person or class of persons trading in Canada, or the establishment of any new trade or industry in Canada, is prejudiced, and it is in the public interest that a licence or licences should be granted;

Prejudice by reason of conditions attached.

(*e*) If any trade or industry in Canada, or any person or class of persons engaged therein, is unfairly prejudiced by the conditions attached by the patentee, whether before or after the passing of this Act, to the purchase, hire, licence, or use of the patented article, or to the using or working of the patented process;

Prejudice in other respects.

(*f*) If it is shown that the existence of the patent, being a patent for an invention relating to a process involving the use of materials not protected by the patent or for an invention relating to a substance produced by such a process, has been utilized by the patentee so as unfairly to prejudice in Canada the manufacture, use or sale of any such materials.

Declaration of basis of grants of patents.

(3) It is declared with relation to every paragraph of the next foregoing subsection that, for the purpose of determining whether there has been any abuse of the exclusive rights under a patent, it shall be taken that patents for new inventions are granted not only to encourage invention but to secure that new inventions shall so far as possible be worked on a commercial scale in Canada without undue delay."

Patentees are advised to acquaint themselves with this and the other provisions of the Act.